

CLAIMS

What is claimed is:

1. A system for polishing a semiconductor device structure, comprising:
a metrology component for detecting any raised areas on an active surface of the semiconductor device structure;
a support structure configured to receive the semiconductor device structure;
a pressurization component including:
a plurality of independently movable pressurization structures; and
actuators corresponding to each of the plurality of pressurization structures, the actuators each being configured to bias a corresponding pressurization structure against a backside of the semiconductor device structure with a selected amount of force;
and
a polishing component.
2. The system of claim 1, wherein each of the plurality of pressurization structures comprises a magnetized material.
3. The system of claim 1, wherein each of the plurality of pressurization structures comprises a material that is attracted to a magnetic field.
4. The system of claim 3, wherein each of the plurality of pressurization structures comprises a ferrous material.
5. The system of claim 3, wherein each of the plurality of pressurization structures comprises a magnetized material.
6. The system of claim 1, wherein each of the plurality of pressurization structures has an annular shape.

7. The system of claim 1, wherein each of the actuators comprises a magnetic controller.
8. The system of claim 7, wherein each the magnetic controller comprises a magnet.
9. The system of claim 8, wherein each the magnetic controller comprises an electromagnet.
10. The system of claim 8, wherein each the magnetic controller is oriented and located so as to repel a corresponding pressurization structure toward a backside of a semiconductor device structure assembled with the support structure.
11. The system of claim 8, wherein each the magnetic controller is oriented and located so as to attract a corresponding pressurization structure toward a backside of a semiconductor device structure assembled with the support structure.
12. The system of claim 1, wherein the actuators comprise a positive pressure source.
13. The system of claim 1, wherein the actuators comprise a negative pressure source.
14. The system of claim 13, wherein the pressurization component further comprises at least one spring associated with each of the plurality of independently movable pressurization structures.
15. The system of claim 14, wherein the at least one spring biases a corresponding pressurization structure against the backside.

16. The system of claim 15, wherein the negative pressure source is configured to withdraw the corresponding pressurization structure away from the backside.
17. The system of claim 1, wherein each actuator is configured to bias a corresponding pressurization structure against a backside of a semiconductor device structure assembled with the support structure with variable amounts of force.
18. The system of claim 1, wherein the polishing component comprises a mechanical polishing apparatus.
19. The system of claim 1, wherein the polishing component comprises a chemical-mechanical polishing apparatus.
20. The system of claim 1, wherein the polishing component includes assembled therewith a rotatable polishing pad.
21. The system of claim 1, wherein the polishing component includes an element for rotating the semiconductor device structure in a plane thereof and relative to a polishing pad assembled with the polishing component.